N° 18,528 A.D. 1889

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PROVISIONAL SPECIFICATION.

[Communicated from abroad by La Société Anonyme des Parfums Naturels de Cannes, of 95, Boulevard Beaumarchais, Paris, France.]

An Improved Method or Process of and Apparatus for the Lixiviation of Various Materials.

I, Henry Harris Lake of the firm of Haseltine, Lake & Co., Patent Agents, Southampton Buildings, in the County of Middlesex, do hereby declare the nature of this invention to be as follows :—

This invention relates to improvements in the method or process of and apparatus for the lixiviation of various materials described in the Specification No. 10280 dated 24th June 1889, and has for its object to obviate the inconveniences hereinafter set forth.

In order to render the said invention better understood I will proceed to describe the same with reference to a battery or series of extractors arranged for the lixiviation of various materials. Suppose for example a moment in the course of an operation when only six extractors are in connection the other extractors of the battery or series being disconnected for charging, discharging purging or other purposes or when the solvent is to be conveyed simultaneously from the first, third and fifth to the second, fourth and sixth extractors. Through the medium of the operating device the second, fourth and sixth extractors are put in communication with the discharge pipe for the gas and the first, third and fifth extractors with the reservoir for the compressed gas the solvent commencing to pass simultaneously through the circulating pipe from the first, third and fifth extractors to the second, fourth and sixth extractors. If then through any cause such as when the extractors contain unequal quantities of material, the outflow of the solvent does not take place at a uniform velocity in all the apparatus, this velocity being for instance greater between the first and second apparatus than between the third and fourth, and the fifth and sixth apparatus, the compressed gas, after all the liquid contained in the first extractor has passed into the second extractor will tend to escape through the latter, so that, for the operation to pursue its normal course, it is necessary to hasten the interruption of the communication between the first and second apparatus then between the third and fourth and next between the fifth and sixth apparatus. In case the velocity of outflowing solvent should happen to be uniform in all the apparatus the first, third and fifth will be empty at the same time and the compressed gas will tend to escape at the same time through the second, fourth and sixth apparatus. Now in order that no irregularities of any kind shall occur in the operation it will be needful to interrupt promptly and simultaneously the communication between the first and second, the third and fourth and the fifth and sixth apparatus.

In the first as well as in the second case it will be conducive to the proper operation of the apparatus to close the communications at an opportune moment, that is to say, the precise moment when the whole quantity of the solvent has just passed from one apparatus into the apparatus connected therewith, the latter being thus filled without permitting the introduction of gas into the same.

As this operation is of a delicate nature it is not advisable that its performance should more or less depend upon the vigilance of a workman.

Under these circumstances I dispense with the manual labour and effect the aforesaid operation automatically.

For this purpose each of the above mentioned extractors is provided either internally or externally according to circumstances with a float having a valve connected with it.

When this automatic closing device is arranged in the interior of the extractor

[*Price 8d.*]

the said valve has its seat at the bottom of the latter in the orifice of the short pipe for connecting the extractor with the circulating pipe for the solvent, and the float is so connected with the valve that at the moment when the level of the solvent is a short distance above the bottom of the extractor the float will cease to swim.

In case the automatic closing device is arranged at the exterior of the extractor, the valve connected with the float is placed in a closed vessel interposed between the extractor and the circulating pipe for the solvent. In this arrangement the operation is similar to that of the device provided inside the extractor, that is to say as soon as the solvent sinks to a certain pre-determined level a short distance from the bottom of the aforesaid vessel the float will discontinue to swim.

The float may either be open or closed at its bottom, but it is invariably so arranged that it will cease to swim when the level of the solvent has descended very low.

The said valve is preferably balanced or so arranged that a minimum force will be sufficient for raising it.

When the improved automatic closing device is employed, the solvent under the pressure of the compressed gas will pass without any difficulty either from the circulating pipe to the extractor, or from the extractor to the circulating pipe, that is to say the introduction or the discharge of the same is readily effected whereas the passage of the compressed gas in the extractor towards the circulating pipe is automatically stopped at the moment when the gas has nearly reached the bottom of the extractor or the vessel wherein the closing device is placed and is therefore liable to pass from the extractor to the circulating pipe for the solvent, and thence to another extractor connected with the former.

As each extractor is provided with the automatic closing device, the passage of the compressed gas will be stopped at the desired moment in the various extractors either successively or simultaneously as may be needed for the proper operation of the apparatus, without the intervention of the workman.

Dated this 19th day of November 1889.

HASELTINE, LAKE & Co.,
45, Southampton Buildings, London, Agents for the Applicant.

COMPLETE SPECIFICATION.

An Improved Method or Process of and Apparatus for the Lixiviation of Various Materials.

I, Henry Harris Lake, of the firm of Haseltine, Lake & Co., Patent Agents, 45 Southampton Buildings, in the County of Middlesex, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improvements in the method or process of and apparatus for the lixiviation of various materials described in the Specification No. 10280 dated 24th June 1889 and has for its object to obviate the inconveniences hereinafter set forth.

In order to render the said invention better understood I will proceed to describe the same with reference to a battery or series of extractors arranged for the lixiviation of various materials. Suppose for example a moment in the course of an operation when only six extractors are in connection, the other extractors of the battery or series being disconnected for charging, discharging, purging or other purposes, or when the solvent is to be conveyed simultaneously from the first, third and fifth into the second, fourth and sixth extractors. Through the medium of the operating device the second, fourth and sixth extractors are in communication with the discharge pipe for the gas and the first, third and fifth extractors with the reservoir for the compressed gas the solvent commencing to pass simultaneously through the circulating pipe from the first, third and fifth extractors to the second, fourth and sixth extractors. If then through any cause such as the extractors containing unequal quantities of material the outflow of the solvent does not take place at a uniform velocity in all the apparatus this velocity being for instance greater between the first and second apparatus than between the third and fourth and the fifth and sixth apparatus the compressed gas, after all the liquid contained in the first extractor has passed into the second extractor, will tend to escape through the latter so that, for the operation to pursue its normal course it is necessary to hasten the interruption of the communication between the first and second apparatus then between the third and fourth and next between the fifth and sixth apparatus. In case the velocity of outflowing solvent should happen to be uniform in all the apparatus the first, third and fifth will be empty at the same time and the compressed gas will tend to escape at the same time through the second, fourth and sixth apparatus. Now in order that no irregularities of any kind shall occur in the operation it will be needful to interrupt promptly and simultaneously the communication between the first and second, the third and fourth and the fifth and sixth apparatus.

In the first as well as in the second case it will be conducive to the proper operation of the apparatus to close the communications at an opportune moment that is to say, the precise moment when the whole quantity of the solvent has just passed from one apparatus into the apparatus connected therewith, the latter being thus filled without permitting the introduction of gas into the same. As this operation is of a delicate nature it is not advisable that its performance should more or less depend upon the vigilance of a workman.

Under these circumstances I dispense with the manual labour and provide means for effecting the aforesaid operation automatically. For this purpose each of the above mentioned extractors is provided either internally or externally according to circumstances with a float having a valve connected with it.

In the first case that is to say, in the case in which the float and valve are arranged in the interior of the extractor, the said valve has its seat at the bottom of the latter in the orifice of the short pipe for connecting the extractor with the circulating pipe for the solvent. In this arrangement as shown in Figure 1

A represents the extractor.

B the orifice for the introduction and discharge of the solvent.

C a valve opening upwards.

D a float connected with the valve C.

X Y being the level of the solvent below which the float ceases to swim.

In the second case the automatic closing device is arranged outside or at the exterior of the extractor, the valve connected with the float is placed in a closed vessel interposed between the extractor and the circulating pipe for the solvent. This arrangement is shown in Figure 2 in which

V is a closed vessel containing the float and valve.

B the pipe for connecting the closed vessel with the extractor.

F the pipe for connecting the closed vessel with the conduit for circulating the solvent.

C a valve opening upwards.

D the float attached to the valve C.

X Y being the level of the solvent below which the float ceases to swim.

The float may either be open or closed from below but it is always so arranged that it will cease to swim when the level of the solvent has descended very low.

The said valve is preferably balanced or has two successive lifts or is otherwise arranged so as to reduce the force necessary for raising it.

When this improved automatic closing device is employed, the movement of the solvent under the pressure of the compressed gas is without difficulty either from the circulating pipe to the extractor or from the extractor to the circulating pipe that is to say, the introduction or the discharge of the same is readily effected, but the movement of the compressed gas in the direction in the extractor towards the circulating conduit or pipe is automatically stopped at the moment when the said gas reaches the level X Y, that is to say when it has a tendency to pass from the extractor to the circulating pipe for the solvent and thence to another extractor connected therewith.

As each extractor is provided with the automatic closing device the passage of the compressed gas will be stopped at the desired moment in the various extractors either successively or simultaneously as may be needed for the proper operation of the apparatus without the intervention of the workman.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed as communicated to me by my foreign correspondents I declare that what I claim is:—

First—The improved method or process of lixiviation by means of connected apparatus wherein each extractor is provided with an automatic closing device substantially as hereinbefore described with reference to the accompanying drawings and having the effect of permitting the free passage of the solvent into each extractor either at the entrance or at the discharge, the passage of the gas from one extractor to the other being at the same time automatically stopped.

Second—The improved closing device or check device constructed substantially as hereinbefore described and for the purpose above specified.

Dated this 8th day of August 1890.

HASELTINE, LAKE & Co.,
45, Southampton Buildings, London, Agents for the Applicant.

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(1 SHEET)

A.D. 1889. Nov. 19. No. 18,528.
LAKE'S COMPLETE SPECIFICATION.

FIG. 1

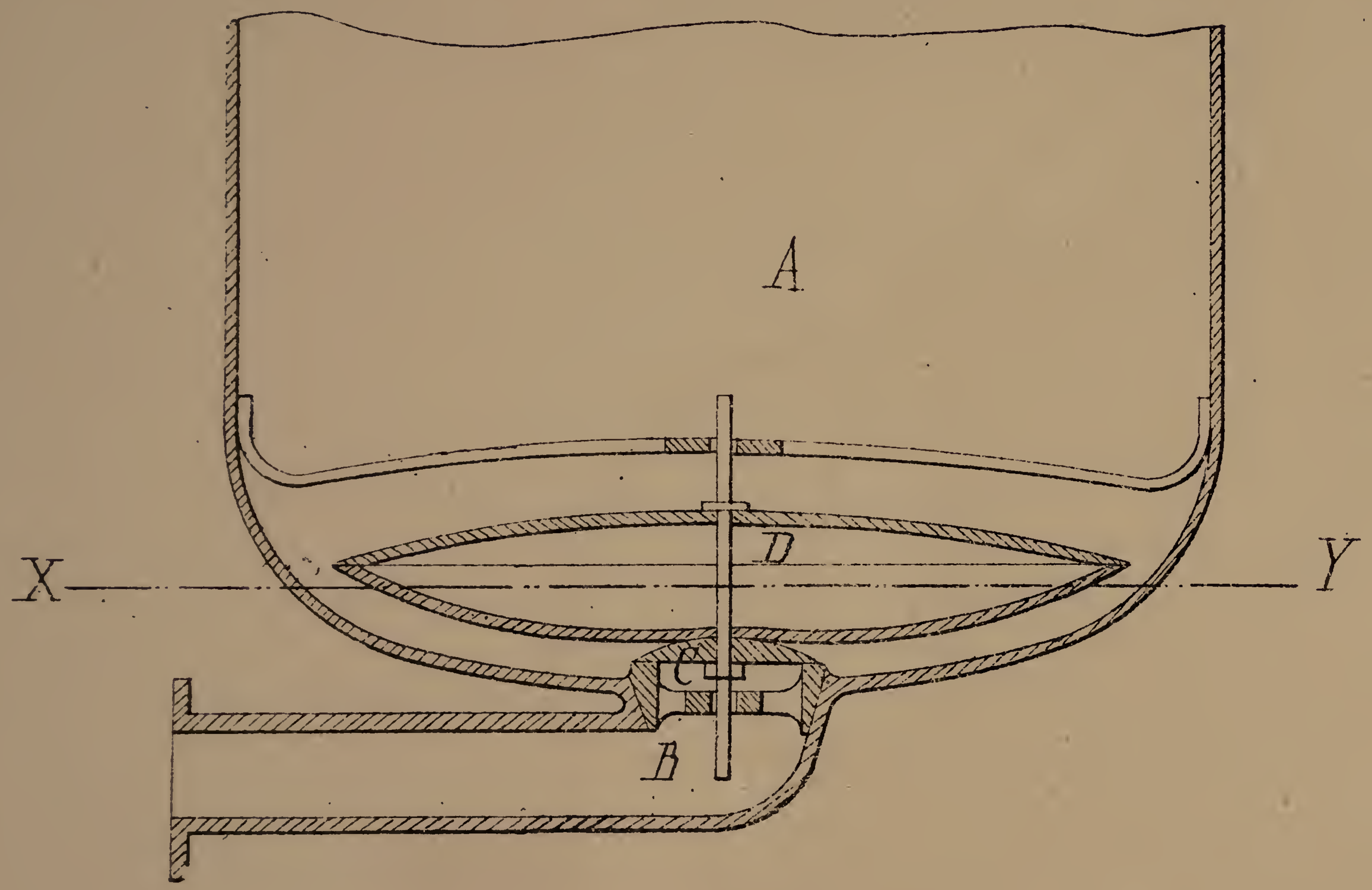
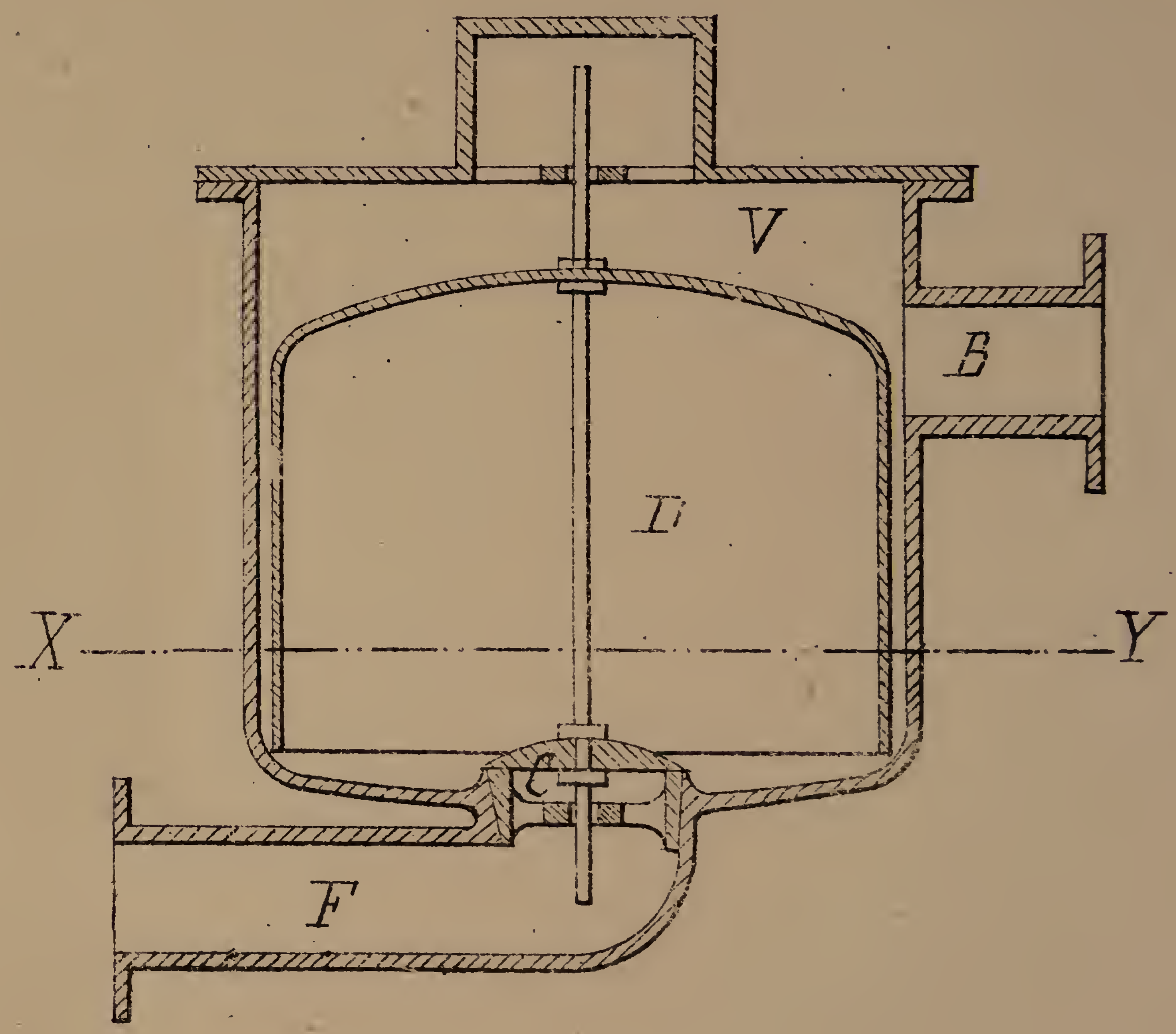


FIG. 2



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